

We claim:

1. A composition for disinfecting pathogenic micro-organisms present in water enabling the water to be potable, comprising:
 - (a) an emulsifier;
 - (b) an essential oil; and
 - (c) optionally an electrolyte and optionally a carrier oil.
2. The composition as claimed in claim 1, wherein the essential oil is selected from the group consisting of clove oil, eucalyptus oil and KapurTulsi oil.
3. The composition as claimed in claim 2, wherein the essential oil is clove oil.
4. The composition as claimed in claim 1, wherein the emulsifier is selected from the group consisting of Tween, Myrj and Bryj surfactants, poloxamers and their derivatives, polyoxyethylene 50 stearate, polyoxyl 35 castor oil, polyoxyl 10 oleyl ether, polyoxyl 20 cetostearyl ether, polyoxyl 40 stearate, polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, propylene glycol diacetate, propylene glycol monostearate, sodium lauryl sulfate, sodium stearate, sorbitan mono-laurate, sorbitan mono-oleate, sorbitan mono-palmitate, sorbitan monostearate, stearic acid, and emulsifying wax.
5. The composition as claimed in claim 1, wherein the emulsifier comprises a Tween surfactant.
6. The composition as claimed in claim 5, wherein the emulsifier comprises Tween 20.
7. The composition as claimed in claim 1, wherein the emulsifier is present in the range of about 0.5 to 4.0% of total essential oil.
8. The composition as claimed in claim 7, wherein the emulsifier is present in the range of about 1.5 to 3.0% of total essential oil.

10039555-010402

9. The composition as claimed in claim 1, wherein the carrier oil comprises an unsaturated vegetable oil.
10. The composition as claimed in claim 1, wherein the carrier oil is present in the range of about 0.01 to 5.0% of total essential oil.
11. The composition as claimed in claim 10, wherein the carrier oil is present in the range of about 0.01 to 0.5% of total essential oil.
12. The composition as claimed in claim 1, wherein the electrolyte is NaCl or Na₂HPO₄.
13. The composition as claimed in claim 1, wherein the electrolyte is present in the range of about 0.01 to 0.1ppm of essential oil.
14. A method of disinfecting water contaminated with pathogenic microorganisms, comprising:
(i) obtaining the composition of claim 1; and
(ii) treating the contaminated water with the composition from step (i) for a period ranging up to 24 hours.
15. The method of claim 14, wherein the contaminated water is treated for a period of between 6-8 hours.
16. The method as claimed in claim 14, wherein the contaminating pathogenic microorganisms are selected from group consisting of *E. coli*, *Salmonella typhi* and *Vibrio cholerae*.
17. The method as claimed in claim 14, wherein the amount of composition used for disinfecting the pathogen contaminated water is in the ratio of about 1:10000 to 1:200000 of composition to water.
18. The method as claimed in claim 17, wherein the amount of composition used for disinfecting the pathogen contaminated water is in the ratio of about 1:10000 to 1:20000 of composition to water.

204070-9966007

19. The method as claimed in claim 17, wherein the amount of composition used for disinfecting the pathogen contaminated water is in the ratio of about 1:20000 and 1:200000 of composition to water.
20. The method as claimed in claim 14, wherein the essential oil is selected from the group consisting of clove oil, eucalyptus oil and KapurTulsi oil.
21. The method as claimed in claim 20, wherein the essential oil is clove oil.
22. The method as claimed in claim 14, wherein the emulsifier used is selected from the group consisting of Tween, Myrj and Bryj surfactants, poloxamers and their derivatives, polyoxyethylene 50 stearate, polyoxyl 35 castor oil, polyoxyl 10 oleyl ether, polyoxyl 20 cetostearyl ether, polyoxyl 40 stearate, polysorbate 20, polysorbate 40, polysorbate 60, polysorbate 80, propylene glycol diacetate, propylene glycol monostearate, sodium lauryl sulfate, sodium stearate, sorbitan mono-laurate, sorbitan mono-oleate, sorbitan mono-palmitate, sorbitan monostearate, stearic acid, and emulsifying wax
23. The method as claimed in claim 14, wherein the emulsifier comprises a Tween surfactant.
24. The method as claimed in claim 23, wherein the emulsifier comprises Tween 20.
25. The method as claimed in claim 14, wherein the emulsifier is present in the composition in the range of about 0.5 to 4.0% of essential oil.
26. The method as claimed in claim 25, wherein the emulsifier is present in the composition in the range of about 1.5 to 3.0% of essential oil.
27. The method as claimed in claim 14, wherein the carrier oil comprises an unsaturated vegetable oil.
28. The method as claimed in claim 14, wherein the carrier oil is present in the composition in the range of about 0.01 to 5.0 % of essential oil.
29. The method as claimed in claim 28, wherein the carrier oil is present in the composition in the range of about 0.01 to 0.5 % of essential oil.

204010 99952007

30. The method as claimed in claim 14, wherein the electrolyte is NaCl or Na_2HPO_4 .
31. The method as claimed in claim 14, wherein the electrolyte is present in the composition in the range between 0.01 to 0.1ppm of essential oil.
32. The method as claimed in claim 14, wherein the essential oil comprises a hydro-alcoholic preparation of essential oil.
33. The method as claimed in claim 31, wherein the ratio of contaminated water to hydro-alcoholic solution of essential oil is in the range between 10:1 to 5000:1.
34. A process of preparing a composition for the disinfection of water, comprising the steps of:
- a) mixing an essential oil, an emulsifier, optionally an electrolyte, and optionally carrier oil;
 - b) shaking, stirring or sonicating the mixture of step (a) to obtain an emulsion of essential oil ; and
 - c) adjusting the pH of solution of step (b) to no greater than 11 using KOH solution to obtain a composition for disinfecting contaminated water.
35. A method as claimed in claim 34, wherein the pH is from 8.5 to 9.5.
36. The method as claimed in claim 34, wherein the essential oil is selected from the group consisting of clove oil, eucalyptus oil and KapurTulsi oil.
37. The method as claimed in claim 36, wherein the essential oil is clove oil.
38. The method as claimed in claim 34, wherein the electrolyte is NaCl or Na_2HPO_4 .
39. The method as claimed in claim 34, wherein the carrier oil comprises an unsaturated vegetable oil.

10039666 010403